

Tradition in Competition to Food Safety, or "Archaic Science" against Brand Name Products

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Traditionally, the homemade beverages or concentrated alcoholic drinks are produced by distilling different types of organic raw materials most of them from biological sources as cereals grains, fruits and juices, these being the starch sources [1], but, even from wood sources. All these sources produce both ethanol and methanol in different proportions, by fermentation process, and the serious health risk of methanol poisoning becomes high when using wood sources [2].

The European and national regulations for Food Safety do specify the strict requirements for producing alcohol drinks, and here are the brand name products, but homemade beverages with over 30% ethanol obtained by repeated distillation in manufactured copper vessels, will contain small amounts of methanol, in case that fruit juice is used the amount reach about 0.2–0.3%, but from fruit pulp the amount may rise to 0.6–0.9% [3].

The most common effects caused by exposure to methanol by drinking alcohol beverages, do not become apparent only after several hours because its metabolism is much slower than the one of ethanol.

After methanol ingestion the health symptoms observed are starting with central nervous system by slowing down the heart and breathing, then liver metabolizes methanol to formic acid affecting the optic nerve easily to blindness by inhibition of cytochrome oxidase [4], and finally reduces oxygen use by mitochondria, produces hypoxia, and then death of the affected tissues [5,6]. The limits of poisoning with methanol are low, and even inhaling or skin absorption can easily reach the levels that are dangerous — 10 mL may produce blindness and 30 mL is potentially fatal [4].

Large areas from different European countries still have domestic alcohol that is produced not necessarily as commercialized beverages but for self use at home. The Transylvania region from Romania is well known and recognized for the popular liquor made from full plums entitled "țuică", highly concentrated alcohol drink obtained after two

successive stages of distillation. The obtaining of this drink has to respect the "procedure" and the process learned and inherited from ancestors, generation by generation, who used to improve it over the centuries to the actual "technology". The first groups of factors that were corrected during the time concerned the raw biological materials (especially cereals and fruits) and their basic fermentation duration until the distillation is applied. The second group of factors have been "optimized" in a very long period of time, and they concerned volume and materials nature of the vessels used (copper is the most common now not only for homemade beverages but also for industrial beer obtaining), but in the same time the energy and temperature for the first and, also for the second stage of distillation process. Last factors that were introduced in preparing concentrated alcohol drinks have to consider removing the "head" and "tail" of the distilled products in order to reduce the by-products and together with them the content of methanol. All these aspects show the development in time of the process for obtaining homemade concentrated alcohol drinks and demonstrates the scientific approach over the generations, thus, the term of "Archaic Science" in this matter, is the most appropriate one. Unfortunately, not respecting procedures, by people not knowing correctly or accurately to reproduce perfectly the procedure, leads to methanol intoxication.

References

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